

WHAT IS CLAIMED IS:

1. A storage and reproduction system for carrying out storage processing and reproduction processing of a transport stream in which coded data is multiplexed, said storage and reproduction system comprising:

10 a storage control device for, when a storage command is received, sequentially storing coded data in a storage device, said coded data corresponding to the storage command among inputted transport stream;

15 an auxiliary information generating device for analyzing said coded data for each access unit that is an access unit during random reproduction, and generating auxiliary information containing recording position information contained in the storage device; and

20 a reproduction control device for, when a reproduction command under a predetermined reproduction condition is received, selectively determining the access unit that conforms to the reproduction condition as a reproduction target based on the auxiliary information, and reading out the access unit targeted for reproduction from the storage device, thereby configuring and outputting a reproduction transport stream.

25 2. The storage and reproduction system according to claim 1, wherein the reproduction control device newly generates configuration information on a program contained in the reproduction transport stream and the reproduction transport

stream, and outputs the configuration information with the reproduction transport stream.

3. The storage and reproduction system according to claim 5, wherein the reproduction control device newly generates time reference information on a program contained in the reproduction transport stream, and outputs the time reference information with the reproduction transport stream.

10 4. The storage and reproduction system according to claim 3, wherein the reproduction control device generates reproduction time information for specifying a time for reproducing the access unit targeted for reproduction, and outputs the reproduction time information with the reproduction 15 transport stream.

5. The storage and reproduction system according to claim 4, wherein the reproduction transport stream is transmitted by the TS packet, and the reproduction control device generates 20 the reproduction time information based on arrival time information assigned when the respective TS packets are stored.

6. The storage and reproduction system according to claim 4, wherein the reproduction control device generates the 25 reproduction time information in consideration of a frame display replacement in an original video stream of the access unit.

7. The storage and reproduction system according to claim 1, wherein the coded data is video data compressed and coded in accordance with an MPEG 2 scheme, and the access unit targeted for reproduction contained in the reproduction transport stream 5 is obtained as a single video sequence.

8. The storage and reproduction system according to claim 1, wherein coded data on one or more programs having one or more components is multiplexed in the inputted transport stream, and 10 the auxiliary information generating device selectively reconfigures a stream from the inputted transport stream according to designation of the program or component, and generates the auxiliary information where the access unit contained in the stream is defined as an analysis target.

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9. The storage and reproduction system according to claim 4, wherein the reproduction control device updates a parameter that assigns a storage amount of a virtual input buffer or a decode timing in the access unit targeted for reproduction by 20 referring to a data amount of the access unit, which is targeted for reproduction and is transferred.

10. The storage and reproduction system according to claim 9, wherein the reproduction control device outputs the 25 reproduction transport stream by associating the update value of the parameter with the reproduction time information.

11. The storage and reproduction system according to claim 4, wherein the reproduction control device configures the reproduction transport stream by assigning each PES packet to the respective access units, and provides the reproduction time 5 information as a PTS of the PES packet.

12. A transport stream storage method for storing a transport stream in which coded data is multiplexed, said transport stream storage method comprising the processes of:

10 sequentially storing coded data in a storage device when a storage command is received, said coded data corresponding to the storage command among inputted transport stream;
analyzing said coded data for each access unit that is an access unit during random reproduction; and
15 generating auxiliary information containing recording position information in the storage device.

13. The transport stream storage method according to claim 12, wherein coded data on one or more programs having one or 20 more components is multiplexed in the inputted transport stream, and the process of generating auxiliary information selectively reconfigures a stream from inputted transport stream according to designation of the program or component, and generates the auxiliary information where the access unit contained in the 25 stream is defined as an analysis target.

14. A transport stream reproduction method for reading out

a transport stream in which coded data is multiplexed and auxiliary information that contains recording position information of an access unit in a storage device, said access unit being a unit of access during random reproduction of the 5 coded data, and for carrying out reproduction processing of the transport stream, said transport stream reproduction method comprising the processes of:

selectively determining the access unit that conforms to the reproduction condition as a reproduction target based 10 on the auxiliary information when a reproduction command under a predetermined reproduction condition is received;

reading out the access unit targeted for reproduction from the storage device; and

15 configuring and outputting a reproduction transport stream.

15. The transport stream reproduction method according to claim 14, further comprising the process of newly generating configuration information on a program contained in the 20 reproduction transport stream and reproduction transport stream,

wherein the process of configuring and outputting a reproduction transport stream outputs the newly generated configuration information with the reproduction transport 25 stream.

16. The transport stream reproduction method according to

claim 14, further comprising the process of newly generating time reference information on a program contained in the reproduction transport stream,

wherein the process of configuring and outputting a
5 reproduction transport stream outputs the newly generated time reference information with the reproduction transport stream.

17. The transport stream reproduction method according to claim 16, further comprising the process of generating reproduction time information for specifying a time for reproducing the access unit targeted for reproduction,

wherein the process of configuring and outputting a reproduction transport stream outputs the generated reproduction time information with .

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18. The transport stream reproduction method according to claim 17, wherein the inputted transport stream is transmitted by the TS packet, and the process of generating reproduction time information generates the reproduction time information 20 based on arrival time information assigned when the respective TS packets are stored.

19. The transport stream reproduction method according to claim 17, wherein the process of generating reproduction time 25 information generates the reproduction time information in consideration of a frame display replacement in an original video stream of the access unit.

20. The transport stream reproduction method according to
claim 17, further comprising the process of updating a parameter
that assigns a storage amount of a virtual input buffer or a
5 decode timing in the access unit targeted for reproduction by
referring to a data amount of the access unit, which is targeted
for reproduction and is transferred.

21. The transport stream reproduction method according to
10 claim 20, wherein the process of configuring and outputting a
reproduction transport stream outputs the reproduction
transport stream by associating an update value of the parameter
with the reproduction time information.

15 22. The transport stream reproduction method according to
claim 17, wherein the process of configuring and outputting a
reproduction transport stream configures the reproduction
transport stream by assigning each PES packet to each of the
access units, and provides the reproduction time information
20 as a PTS of the PES packet.